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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,874	07/06/2000	TOSHIHIDE HAMAGUCHI	000831	3201
23850	7590	12/17/2003	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP			AU, SCOTT D	
1725 K STREET, NW			ART UNIT	
SUITE 1000			PAPER NUMBER	
WASHINGTON, DC 20006			2635	

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/582,874

Applicant(s)

HAMAGUCHI ET AL.

Examiner

Scott Au

Art Unit

2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                                                        |                                                                             |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4 &amp; 6-8</u> . | 6) <input type="checkbox"/> Other:                                          |

### DETAILED ACTION

The application of Hamaguchi et al. for an "Alerting device and radio communication device having the alerting device" filed April 06, 2000 has been examined.

Claims 1-17 are pending.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-3, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Mittel et al. (US# 5,828,295).

Referring to claim 1, Mittel et al. disclose a notifying device (100) (i.e. a mode tracking transducer driver) comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a signal preparing circuit (106) (i.e. a transducer driver) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) at the time of notifying operation, the notifying device (100) (i.e. a mode tracking transducer driver) being characterized in that the drive signal has a frequency which varies within range

including the resonance frequency of the vibrator(102) (i.e. electromagnetic transducer to generate a tactile alert) and matches the resonance frequency during the variation (col. 3 lines 9-34; see Figure 1).

Referring to claim 10, Mittel et al. disclose a wireless communications system comprising a notifying device (100) (i.e. a mode tracking transducer driver) for notifying the user of incoming calls, the notifying device (100) (i.e. a mode tracking transducer driver) comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a signal preparing circuit (106) (i.e. a transducer driver) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) at the time of notifying operation, the wireless communication system being characterized in that the signal drive signal has a frequency which varies within a range including the resonance frequency of the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) and matches the resonance frequency during the variation (col. 3 lines 9-34; see Figure 1).

Referring to claim 2, Mittel et al. disclose a notifying device according to claim 1 wherein the variation of the frequency of the drive signal corresponds to a variation in the resonance frequency of the vibrator due to tolerances of specifications on which the resonance frequency is dependent (col. 3 lines 9-34).

Referring to claim 3, Mittel et al. disclose a notifying device according to claims 1 and 11 wherein the resonance frequency of the vibrator is a low frequency of p to hundreds of hertz, and the vibration of the vibrator has at the resonance frequency an amplitude generally perceivable by t he human body (col. 3 lines 9-34).

Referring to claim 8, Mittel et al. disclose a notifying device according to claim 1 wherein the frequency of the drive signal gradually increases or gradually decreases stepwise within the definite range (col. 3 lines 9-34).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) as applied to claim 1 above, and further in view of Kagan (US# 3,623,064).

Referring to claims 4-6, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. did not explicitly disclose wherein the drive signal has an

alternating waveform of rectangular waves or sine waves having a frequency periodically varying at 0.5 to 10 Hz, 1.37 to 2.98 Hz or at 2.18 Hz.

In the same field of endeavor of electric vibrator, Kagan teaches wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at a frequency in a subaudible range of 5 Hz (col. 1 lines 21-30; see Figure 3) in order to activate the vibrator means.

Therefore, it would have been obvious person as a matter of design expedient through routine experimentation to a person of ordinary skill in the art at the time of the invention was made to include wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at 0.5 to 10 Hz, 1.37 to 2.98 Hz or at 2.18 Hz of system disclosed by Kagan into system of Mittel et al. with the motivation for doing so would allow the range of frequency of the drive signal varied within range that is suitable and work best for their system in achieving optimal results.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) as applied to claim 1 above, and further in view of Ditthardt (US# 3,628,150).

Referring to claim 7, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. did not explicitly disclose wherein the frequency of the drive signal varies in

the form of triangular waves, sine waves or sawtooth waves having the definite range as the amplitude thereof.

In the same field of endeavor of alerting signal in a paging communication system, Ditthardt teaches wherein the frequency of the drive signal varies in the form of triangular waves, sine waves or sawtooth waves having the definite range as the amplitude thereof (col. 4 lines 6-25; see Figure 2) in order to have a calling-code signal to a substantially noise-free continuous-wave signal having different amplitude levels reflecting the code represented by the detected signal.

Therefore, it would have been obvious to a of ordinary skill in the art at the time of the invention was made to include wherein the frequency of the drive signal varies in the form of triangular waves, sine waves or sawtooth waves having the definite range as the amplitude thereof of system disclosed by Ditthardt into system of Mittel et al. with the motivation for doing so would allow the frequency varied in wave form with definite range.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) as applied to claim 1 above, and further in view of Saiki et al. (US# 6,208,237).

Referring to claim 9, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. did not explicitly disclose wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet

attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil.

In the same field of endeavor of electro-mechanical and acoustic transducer, Saiki et al. teach wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil (col. 1 line 60 to col. 2 line 15 and col. 6 lines 41-64) in order to have a strong vibration and sound.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil of system disclosed by Saiki et al. into system of Mittel et al. with the motivation for doing so would allow a notifying device consisted of a vibrator.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) in view of Muto et al. (US 5,754,096).

Referring to claim 11, Mittel et al. disclose a wireless communication system having incorporated therein a notifying device (100) (i.e. a mode tracking transducer driver) for performing different kinds of notifying operations including notification of



incoming calls, the notifying device comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a drive signal feed circuit (i.e. a circuit of notifying device 100 generates signal to the electromagnetic transducer 102) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert), the wireless communications system being characterized in that the drive signal feed circuit comprises:

Command signal preparing means (104) (i.e. voltage control oscillator) for preparing notification command signals (502) (i.e. a transducer drive signal) which are different for different contents of notification in conformity with the content, and drive signal preparing means (106) (i.e. a transducer driver) operative in response to the notification command signal to prepare a drive signal which varies in frequency within a range including the resonance frequency of the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert (col. 2 lines 31-48 and col. 3 line 9 to col. 4 line 11; see Figure 1) . However, Mittel et al. did not explicitly disclose a drive signal which differs in the state of variation for the different notification command signals and to feed the drive signal to the vibrator.

In the same field of endeavor of electronic apparatus with vibration informing function, Muto et al. teach drive signal which differs in the state of variation for the different notification command signals and to feed the drive signal to the vibrator (col. 2 lines 8-32, col. 4 lines 26-67 and col. 6 lines 49-64; see Figures 1-2, 4-11) to generate different vibration patterns in order to know different incoming calls.

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to include a drive signal which differs in the state of variation for the different notification command signals and to feed the drive signal to the vibrator of system disclosed by Muto et al. into system of Mittel et al. with the motivation for doing so would allow the vibrator to outputted different notifications.

Referring to claim 12, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) varies in frequency continuously in conformity with the notification command signal or intermittently at a specified period in conformity with the notification command signal (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 13, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) varies in frequency at a specified period in conformity with the notification command signal (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 14, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the variation of frequency of the drive signal prepared by the drive signal preparing means (106) (i.e. a

transducer driver) corresponds to a variation in the resonance frequency of the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) due to tolerances for specifications which govern the resonance frequency (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 15, Mittel et al. in view of Muto et al. disclose a notifying device in claim 1, claim 15 equivalent to that of claim 3 addressed above, incorporated herein. Therefore, claim 15 is rejected for same reasons given with respected to claim 3.

Referring to claim 16, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the command signal preparing means prepares an incoming call notifying command signal for notifying the user of an incoming call, a caller notifying command signal for distinguishing callers, and /or a mode notifying command signal for notifying the user of an operation mode of the system (col. 2 lines 26-47 and col. 3 lines 9-34).

Referring to claim 17, Mittel et al. in view of Muto et al. disclose a notifying device in claim 1, claim 17 equivalent to that of claim 9 addressed above, incorporated herein. Therefore, claim 17 is rejected for same reasons given with respected to claim 9.

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Narea et al. (US# 5,936,516) disclose vibrating apparatus and method thereof.

McClurg et al. (US# 5,649,020) disclose an electronic driver for an electromagnetic resonant transducer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Au whose telephone number is (703) 305-4680. The examiner can normally be reached on Mon-Fri, 8:30AM – 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached at (703) 305-4704. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9314 for regular communications and (703)-872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Scott Au

December 5, 2003

SA

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